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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/712,561	11/13/2003	Takehiro Zukawa	82478-2000	8809
21611	7590	07/28/2006	EXAMINER	
SNELL & WILMER LLP 600 ANTON BOULEVARD SUITE 1400 COSTA MESA, CA 92626			PERRY, ANTHONY T	
			ART UNIT	PAPER NUMBER
			2879	

DATE MAILED: 07/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/712,561	Applicant(s) ZUKAWA ET AL.	
	Examiner Anthony T. Perry	Art Unit 2879	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 April 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) 14-19, 32 and 33 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 and 20-31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

Applicant's election without traverse of claims 1-13 and 20-31 in the reply filed on 4/27/06 is acknowledged.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-9, and 20-28 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 2000-011885.

Regarding claims 1-2, JP 2000-011885 discloses a plasma display panel that emits visible light caused by an ultraviolet ray from a discharge generated in a discharge medium including a rare gas, the light emitting device comprising: a vessel that is hermetically sealed and contains the discharge medium; a phosphorous material disposed in the vessel (6a); and one or more photocatalysts (5a) that are disposed at one or more first areas inside the vessel, the first areas being reachable for one or both of the ultraviolet ray and light emitted from the phosphorous material, and are in contact with the discharge medium (See Fig. 4 and Fig. 5). The vessel is made of at least a first substrate (1) and a second substrate (not shown) that oppose each other and are inherently sealed together around edges thereof, a plurality of ribs (4) are formed on the first substrate (1), in each of at least one of second areas provided between the ribs, the phosphorous material forms one or more phosphor layers on one or more walls that surround the

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second area, and at least one of the photocatalysts (5a) is disposed at a position in the second area in which the phosphor layer (6a) is formed.

Regarding claims 3 and 7-9, Fig. 4 shows the photocatalysts (5a) distributed throughout the phosphor layer (6). When absorbing an ultraviolet ray, each phosphor layer emits light in a color that is common to the phosphor layers in that second area, the color being one of red, green, and blue, the photocatalysts each have an absorption edge in one of two or more wavelength bands that are different from each other, and which wavelength band the absorption edge of each photocatalyst is within is determined according to the color of the light emitted from the phosphor layer that is disposed in vicinity thereof. The second areas are the cells formed between adjacent barrier ribs (4) and the phosphors (6a) alternate red, blue, and green between adjacent cells. JP 2000-011885 teaches that the photocatalyst particles (5a) which are formed in each of the individual cells (all of the second areas) are made of titanium dioxide. Titanium dioxide has an absorption edge within a wavelength band of green and blue, generally between 380nm and 550nm.

Regarding claims 4-6, Fig. 5 shows the phosphor layers (6) are porous allowing discharge medium to pass through and the photocatalysts are disposed between the first substrate (1) and the phosphor layers (6), between the ribs (4) and the phosphor layers (6), disposed in the vicinity of the top of the ribs (4), and in contact with the phosphor layer (6).

Regarding claims 20-28, when absorbing an ultraviolet ray, each phosphor layer emits light in a color that is common to the phosphor layers in that second area, the color being one of red, green, and blue, the photocatalysts each have an absorption edge in one of two or more wavelength bands that are different from each other, and which wavelength band the absorption

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edge of each photocatalyst is within is determined according to the color of the light emitted from the phosphor layer that is disposed in vicinity thereof. The second areas are the cells formed between adjacent barrier ribs (4) and the phosphors (6) alternate red, blue, and green between adjacent cells. JP 2000-011885 teaches that the photocatalyst layer (5) which are formed in each of the individual cells (all of the second areas) are made of titanium dioxide. Titanium dioxide has an absorption edge within a wavelength band of green and blue, generally between 380nm and 550nm.

Claims 1 and 12-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Tadaki et al. (US 2001/0054871).

Regarding claims 1 and 12-13, Tadaki et al. disclose a plasma display panel that emits visible light caused by an ultraviolet ray from a discharge generated in a discharge medium including a rare gas, the light emitting device comprising: a vessel that is hermetically sealed and contains the discharge medium; a phosphorous material (28R,28G,28B) disposed in the vessel; and one or more photocatalysts (33) that are disposed at one or more first areas inside the vessel, the first areas being reachable for one or both of the ultraviolet ray and light emitted from the phosphorous material, and are in contact with the discharge medium (See for example Fig. 2 and description). The vessel is made of at least a first substrate (21) and a second substrate (11) that oppose each other and are inherently sealed together around edges thereof. Tadaki discloses the photocatalyst layer (33) formed over the entire first substrate (21). The photocatalysts are disposed in regions outside and inside of the image display area in which the phosphorous material is disposed. Since the photocatalyst is disposed on the entire surface of the first

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substrate and the first substrate is bonded to the second substrate the photocatalyst is disposed in the vicinity of the edges the substrates.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 10-11 and 29-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 2000-011885.

Regarding claims 10, and 29-31, JP 2000-011885 discloses the use of titanium dioxide as the photocatalyst. The reference does not specifically state what form of titanium dioxide is used. It has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have use titanium dioxide in anatase form, since the selection of known materials for a known purpose is within the skill of the art. Titanium dioxide in anatase form is known for its excellent light shielding/reflecting properties.

Regarding claim 11, as stated above, JP 2000-011885 uses titanium dioxide as the photocatalyst. Titanium dioxide has an absorption edge within a visible light range.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to *Anthony Perry* whose telephone number is (571) 272-2459. The

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examiner can normally be reached between the hours of 9:00AM to 5:30PM Monday thru Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel, can be reached on (571) 272-2457. **The fax phone number for this Group is (571) 273-8300.**

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Anthony Perry
Patent Examiner
Art Unit 2879
July 23, 2006

M. S.
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